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FEDERAL-STATE COOPERATIVE  
SNOW SURVEYS AND IRRIGATION WATER FORECASTS  
for  
**Arizona**

By  
Division of Irrigation, Soil Conservation Service  
United States Department of Agriculture

As of  
FEB. 15, 1950

Data included in this report were obtained by the agency named above in cooperation with the Federal, State and local organizations listed on the last page of this report.

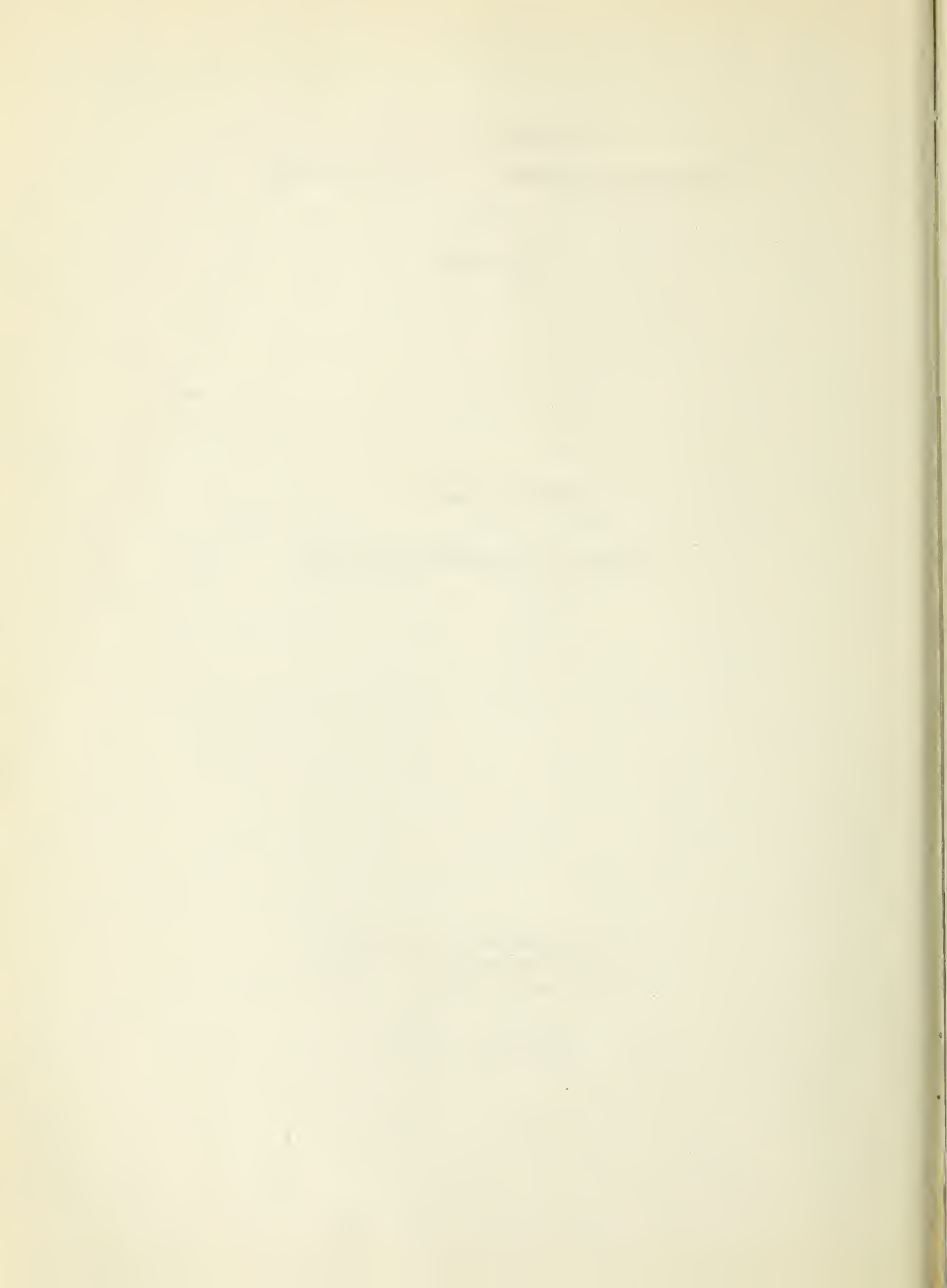


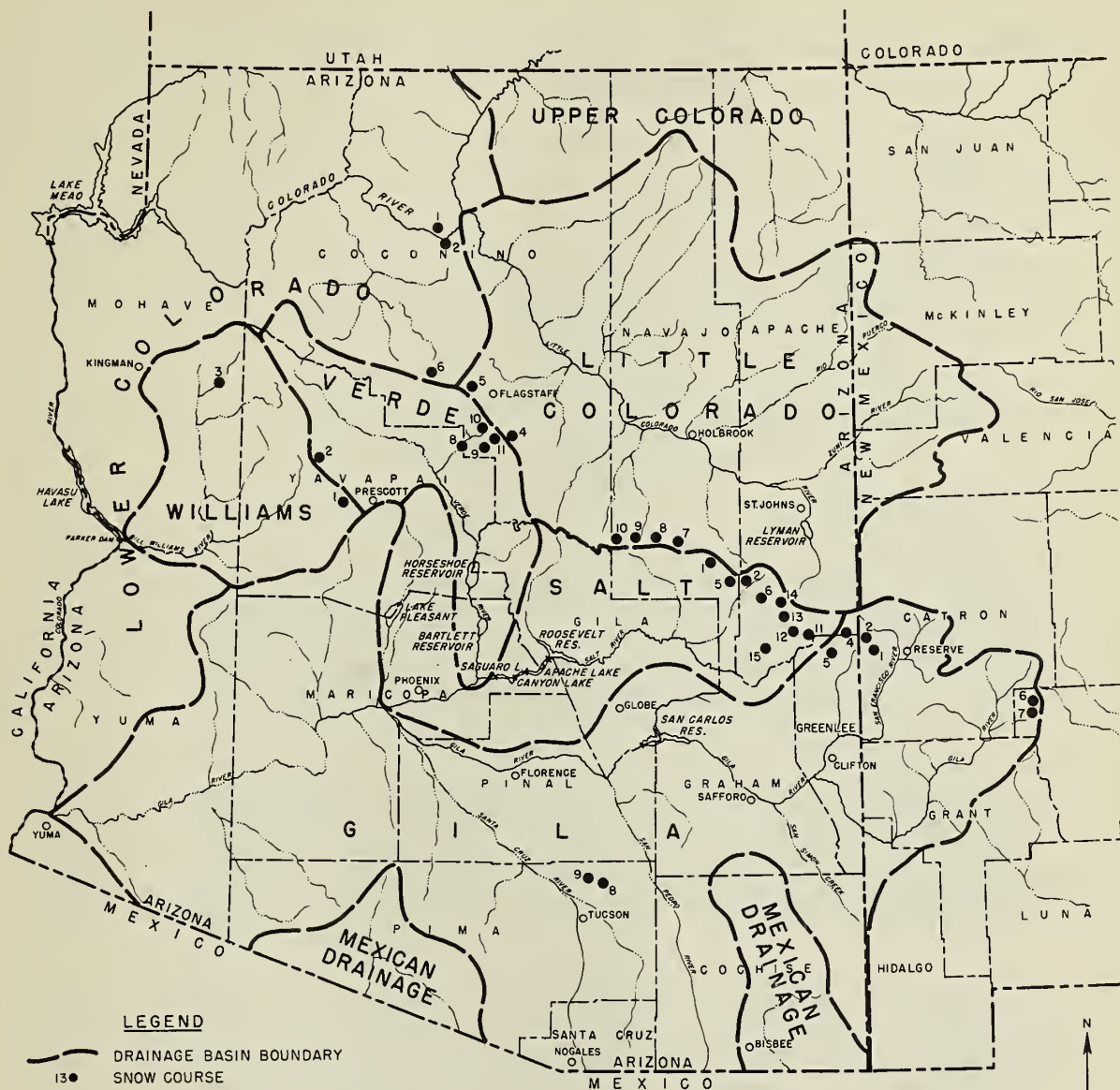
FEDERAL-STATE COOPERATIVE  
SNOW SURVEYS AND IRRIGATION WATER FORECASTS  
FOR  
ARIZONA

Report Prepared  
by  
Burke Peterson-Irrigation Engineer

Division of Irrigation  
Soil Conservation Service  
Phoenix, Arizona

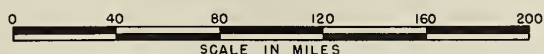
ROOM 24 POST OFFICE  
PHOENIX, ARIZONA





## ARIZONA COOPERATIVE SNOW SURVEYS

SNOW COURSES AND DRAINAGE BASINS  
DECEMBER 1949





# INDEX TO SNOW COURSES

NUMBER	NAME	ELEVATION
<u>LITTLE COLORADO RIVER</u>		
1.	Forest Dale . . . . .	6,000
2.	McNary . . . . .	7,200
3.	Nutriosio . . . . .	8,500
4.	Mormon Lake . . . . .	7,350
5.	Fort Valley . . . . .	7,350
7.	Gentry . . . . .	7,600
8.	Heber . . . . .	7,600
9.	Canyon Creek . . . . .	7,500
10.	Elk . . . . .	7,600
11.	Mormon Mountain . . . . .	7,500
<u>WILLIAMS RIVER</u>		
1.	Iron Springs . . . . .	6,200
2.	Camp Wood . . . . .	5,700
3.	Willow Ranch . . . . .	5,000
<u>GILA RIVER</u>		
1.	Frisco Divide (N.M.) . . . . .	8,000
2.	State Line (N.M.) . . . . .	8,000
3.	Nutriosio . . . . .	8,500
4.	Coronado Trail . . . . .	8,000
5.	Beaver Head . . . . .	8,000
6.	Taylor Creek (N.M.) . . . . .	7,850
7.	Inman (N.M.) . . . . .	7,800
8.	Rose Canyon . . . . .	7,300
9.	Bear Wallow . . . . .	8,100
<u>VERDE RIVER</u>		
1.	Iron Springs . . . . .	6,200
2.	Camp Wood . . . . .	5,700
3.	Mingus Mountain . . . . .	7,100
4.	Morman Lake . . . . .	7,350
5.	Fort Valley . . . . .	7,350
6.	Chalender . . . . .	7,100
8.	Munds Park . . . . .	6,500
9.	Casner Park . . . . .	6,930
10.	Antelope Park . . . . .	7,300
11.	Mormon Mountain . . . . .	7,500
<u>SALT RIVER</u>		
1.	Forest Dale . . . . .	6,000
2.	McNary . . . . .	7,200
3.	Nutriosio . . . . .	8,500
4.	Coronado Trail . . . . .	8,000
5.	Milk Ranch . . . . .	7,000
6.	McKay . . . . .	8,250
7.	Gentry . . . . .	7,600
8.	Heber . . . . .	7,600
9.	Canyon Creek . . . . .	7,500
10.	Elk . . . . .	7,600
11.	Big Lake Knoll . . . . .	8,800
12.	Maverick Fork . . . . .	9,050
13.	Baldy . . . . .	9,000
14.	Ft. Apache . . . . .	9,000
15.	Pacheta . . . . .	7,800
<u>LOWER COLORADO RIVER</u>		
1.	Bright Angel . . . . .	8,400
2.	Grand Canyon . . . . .	7,500
5.	Fort Valley . . . . .	7,350
6.	Chalender . . . . .	7,100



## WATER SUPPLY OUTLOOK

### Arizona

February 15, 1950

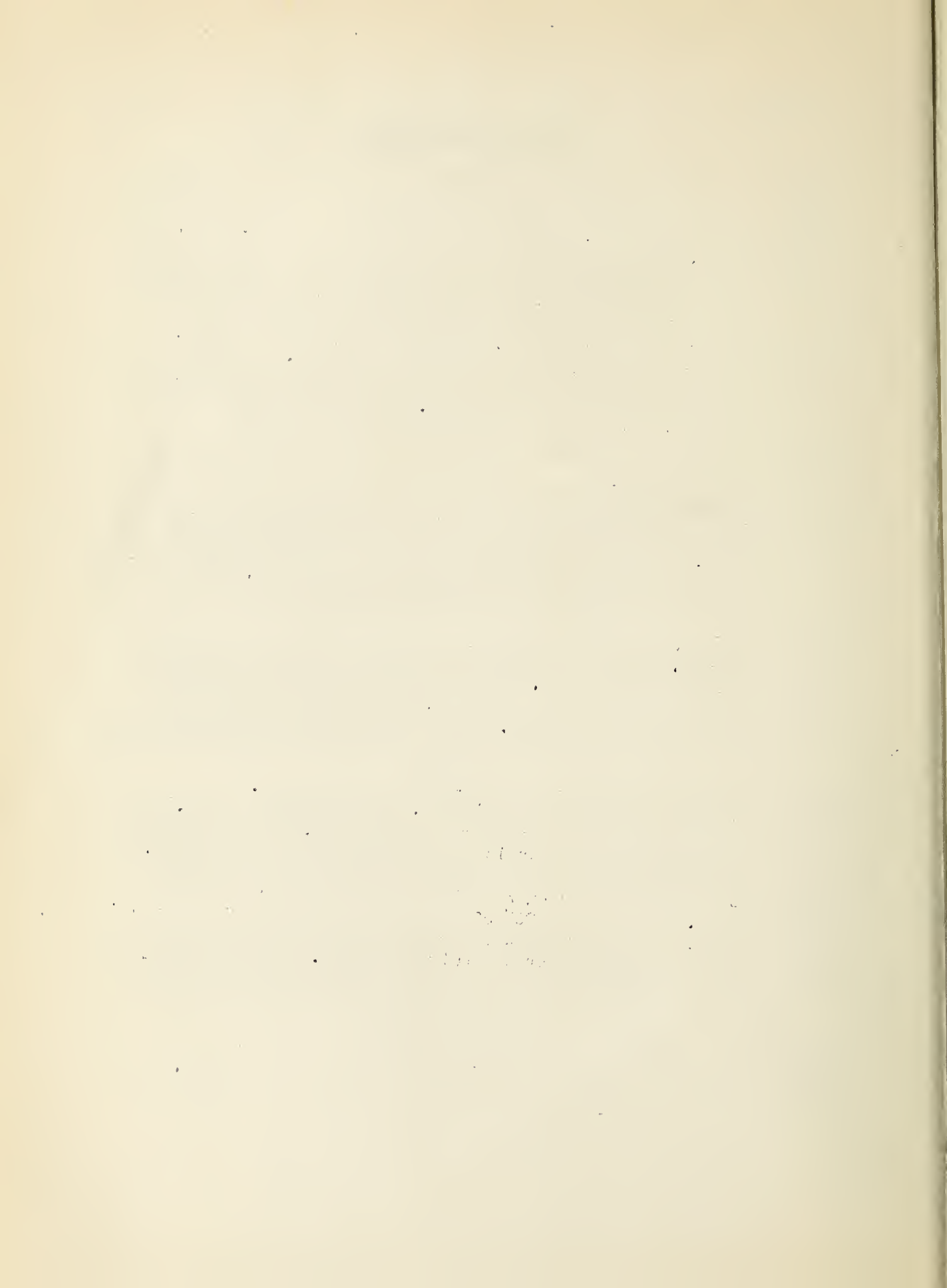
\* \* \* \* \*  
\* February 15, 1950 snow surveys give a poor out\*  
\* look for a good runoff from the principal \*  
\* water sheds of the state. Snow stored water \*  
\* in the mountain areas are from one-third to \*  
\* one-fifth normal. Due to the good runoff of \*  
\* last year, the stored water in Arizona reser- \*  
\* voirs at this time is slightly less than \*  
\* twice that of last year. \*  
\* \* \* \* \*

Precipitation Below normal precipitation has occurred on the Salt, Verde and Gila river watersheds during this last month. Soil moisture conditions are generally good on the Salt and Verde watersheds but poor on the Gila River watershed. The Williams River watershed has had below normal precipitation as has the Little Colorado River.

Snow Cover February 15 snow surveys show the snow stored water on the Verde River drainage to be about one-third normal. Snow stored water on this date was about one-eighth of last year. Due to high temperatures the present snow cover is melting rapidly. Small riverlets are present all along the drainage.

Snow stored water on the Salt River drainage is about one-third normal and about one-tenth of last year. The Alpine area reports only spotted snow. Big Lake area of Mt. Baldy has about two feet of snow on the level. The McNary-Springerville highway is clear of snow to Sheep Springs.

Snow stored water on the Gila River watershed is very poor. It is about 20% of normal and only 10% of last year's high. Most of the courses report less than two inches of snow on the level or an equivalent of 0.5 inch of water.



The three courses on the Bill Williams River report no snow. The Little Colorado watershed has about one-half of normal snow stored water.

Runoff Prospects for a good runoff on the Salt and Verde are poor. The flow of the Salt has not varied much above 300 cubic feet per second for several weeks. The flow of the Verde has increased to around 1000 cubic feet per second. This flow has held for only a little over a week.

The Gila River runoff has been poor and prospects for much of an increase in stream flow due to the melting of snow are dismal.

Reservoir Storage The total storage of reservoirs in Arizona is less than twice what it was last year at this time. Water stored in the Salt River reservoir is 80% of normal. The San Carlos reservoir storage is about 50% of normal, and the storage in the Verde River reservoirs is about normal or 60% of last year. Lake Pleasant contains about 6,000 acre feet or one-third the amount it had last year at this time. Lake Havasu is storing 625,400 acre feet and Lake Mead 18,571,000 acre feet.

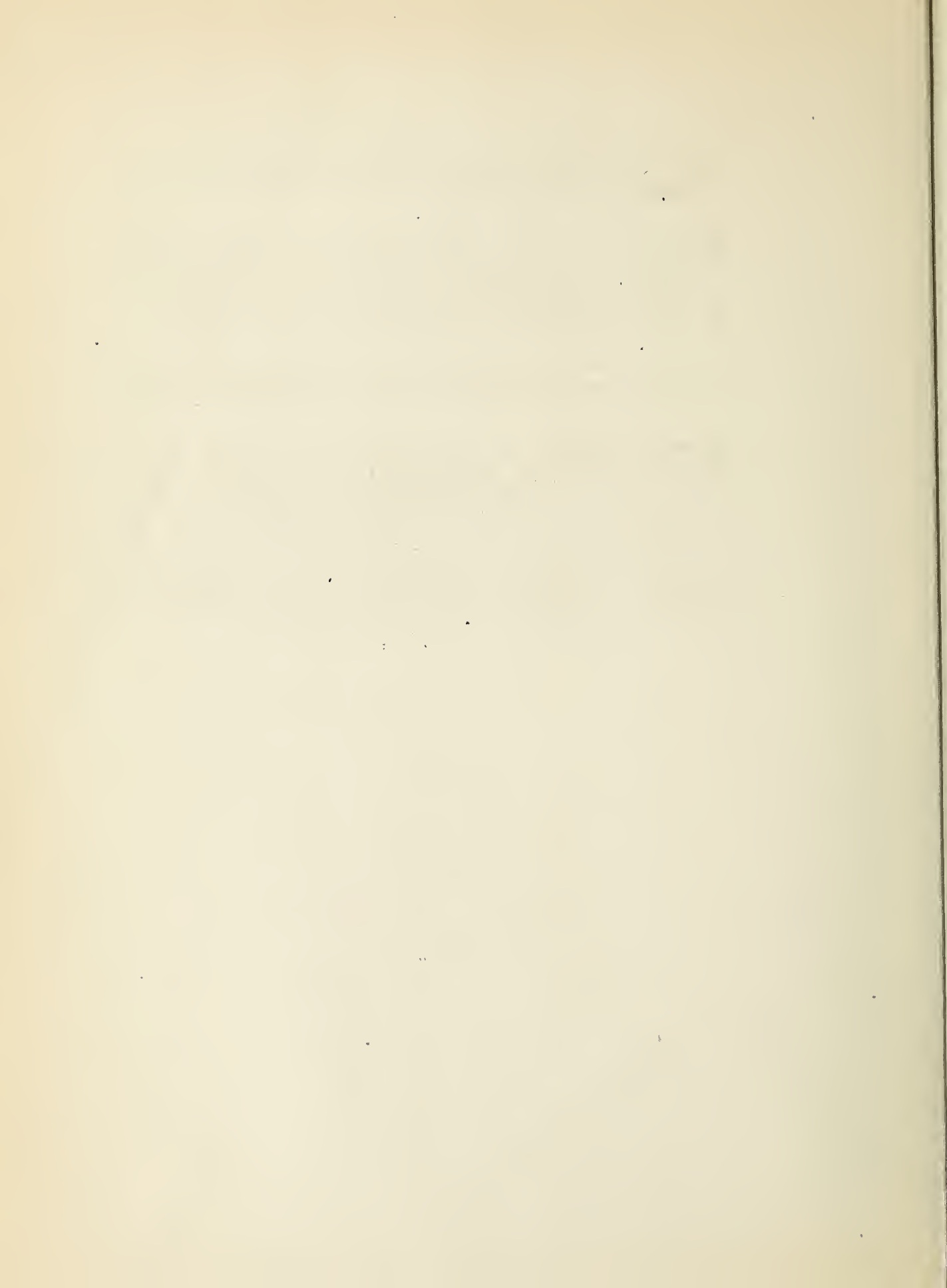


TABLE I

ARIZONA SNOW SURVEYS FEBRUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS										
		Water Content (Inches)					Past Record					
DRAINAGE BASIN and SNOW COURSE	Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	1950	1949	1948	Years of Record	Av. Water Content (Inches)
LITTLE COLORADO RIVER												
Forest Dale	1	2	9N	21E	6000	2/15	.5	.2	6.0	1.7	10	1.2
McNary	2	14	8N	23E	7200	2/15	4.9	1.9	8.8	2.8	10	3.1
Nutriosio	3	23	6N	30E	8500	2/17	1.6	0.5	9.1	3.2	10	3.0
Mormon Lake	4	13	18N	8E	7350	2/17	13.7	3.9	22.3	6.8	3	10.3
Fort Valley	5	22	22N	6E	7350	2/15	5.8	2.0	11.6	1.0	3	4.3
Gentry	7	36	11N	15E	7600	2/15	13.7	3.7		New Course		
Heber	8	28	11N	15E	7600	2/15	12.0	3.4		New Course		
Canyon Creek	9	18	11N	15E	7500	2/15	15.1	4.4		New Course		
Elk	10	31	11N	14E	7600	2/15	18.6	5.2		New Course		
Mormon Mt.	11	14	18N	8E	7500	2/17	19.5	6.3		New Course		
GILA RIVER												
Frisco Divide	1	31	6S	20W	8000	2/17	2.1	.7	6.3	3.3	10	2.4
State Line	2	6	6S	21W	8000	2/17	1.3	.5	8.1	3.2	10	3.5
Nutriosio	3	23	6N	30E	8500	2/17	1.6	.5	9.1	3.2	10	3.0
Coronado Trail	4	26	5N	30E	8000	2/17	1.5	.5	12.4	4.0	10	4.4
Beaver Head	5	13	4N	30E	8000	2/15	1.4	.4	10.1	N.S.	9	3.9
Taylor Creek	6	20	10S	10W	7850	No Report			2.1	1.8	8	0.6
Inman	7	6	11S	10W	7800	No Report			1.9	1.3	4	1.2
Rose Canyon	8	15	12S	16E	7300	2/15	3.1	.8	4.2	1.5	2	2.9
Bear Wallow	9	6	12S	16E	8100	2/15	7.5	2.2	7.9	2.2	2	5.1

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TABLE I

## ARIZONA SNOW SURVEYS FEBRUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS										
		Water Content (Inches)			Past Record							
DRAINAGE BASIN and SNOW COURSE	Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	1950	1949	1948	Years of Record	Av. Water Content (Inches)
WILLIAMS RIVER												
Iron Springs	1	22	14N	3W	6200	2/13	0	0	10.9	0.5	4	2.8
Camp Wood	2	3	16N	6W	5700	2/15	0	0	8.3	0.5	4	2.2
Willow Ranch	3	16	21N	11W	5000		No Report		4.3	0	4	1.1
SALT RIVER												
Forest Dale	1	2	9N	21E	6000	2/15	.5	.2	6.0	1.7	10	1.2
McNary	2	14	8N	23E	7200	2/15	4.9	1.9	8.8	2.8	10	3.1
Nutriso	3	23	6N	30E	8500	2/17	1.6	0.5	9.1	3.2	10	3.0
Coronado Trail	4	26	5N	30E	8000	2/17	1.5	0.5	12.4	4.0	10	4.4
Milk Ranch	5	28	8N	23E	7000	2/15	2.4	1.0	5.1	1.6	9	1.8
Gentry	7	36	11N	15E	7600	2/15	13.7	3.7		New Course		
Heber	8	28	11N	15E	7600	2/15	12.0	3.4		New Course		
Canyon Creek	9	18	11N	15E	7500	2/15	15.1	4.4		New Course		
Elk	10	31	11N	14E	7600	2/15	18.6	5.2		New Course		
Big Lake Knoll	11	2	5N	28E	8800	2/14	22.7	5.5		New Course		
Maverick Fork	12	13	6N	27E	9050	2/14	24.3	6.8		New Course		
Baldy	13	28	7N	27E	9000	2/14	14.4	3.9		New Course		
Ft. Apache	14	18	7N	27E	9000	2/14	9.9	2.9		New Course		
Pacheta	15				7800	2/15	3.0	.8		New Course		



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TABLE I

## ARIZONA SNOW SURVEYS FEBRUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS										
DRAINAGE BASIN and SNOW COURSE	Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	Water Content (Inches)		Past Record Years of Record	Av. Water Content (Inches)	
								1950	1949			1948
VERDE RIVER												
Iron Springs	1	22	14N	3W	6200	2/13	0	0	10.9	0.5	4	2.8
Camp Wood	2	3	16N	6W	5700	2/15	0	0	8.3	0.5	4	2.2
Mingus Mt.	3	3	15N	2E	7100	2/16	0	0	10.8	0.5	3	3.8
Mormon Lake	4	13	18N	8E	7350	2/17	13.7	3.9	22.3	6.8	3	10.3
Fort Valley	5	22	22N	6E	7350	2/15	5.8	2.0	11.6	1.0	3	4.3
Chalender	6	27	22N	3E	7100	2/15	10.2	3.4	10.9	3.4	3	4.9
Munds Park	8	7	18N	7E	6500	2/17	0	0	New Course	New Course		
Casner Park	9	19	18N	8E	6930	2/17	12.3	5.1	New Course	New Course		
Antelope Park	10	29	19N	8E	7300	2/17	17.1	6.7	New Course	New Course		
Mormon Mt.	11	14	18N	8E	7500	2/17	19.5	6.3	New Course	New Course		
LOWER COLORADO RIVER												
Bright Angel	1	34	33N	3E	8400	2/15	42.8	4.2	17.9	6.6	2	12.3
Grand Canyon	2	21	30N	4E	7500	2/15	11.7	3.5	8.9	2.2	2	5.6
Fort Valley	5	22	22N	6E	7350	2/15	5.8	2.0	11.6	1.0	3	4.3
Chalender	6	27	22N	3E	7100	2/15	10.2	3.4	10.9	3.4	3	4.9



TABLE 2

STATUS OF RESERVOIR STORAGE, February 15, 1950

BASIN and STREAM	RESERVOIR	USABLE CAPACITY (1000 A.F.)	THOUSANDS ACRE FEET IN STORAGE					About Feb. 15
			1950	1949	1948	1947	10 yr. Avg. 1939-1948	
Agua Fria	Lake Pleasant	179	6	18	1	3	17	
Colorado	Lake Havasu	688	625	564	583	629	536	
Colorado	Lake Mead	27,935	18,571	18,563	19,448	18,561	19,792	
Gila	San Carlos	1,200	94	162	1	19	218	
Verde	Bartlett	179	45	93	3	34	47 <sup>a</sup>	
Verde	Horseshoe	67	11	1	11	16	12 <sup>b</sup>	
Salt	Roosevelt	1,382	318	174	34	133	495	
Salt	Apache	245	228	107	158	224	185	
Salt	Canyon	58	34	23	26	37	33	
Salt	Saguaro	70	22	26	20	16	20	

a - Average for years 1941 through 1948

b - Average for years 1946 through 1948



# LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Elk . . . . .	Gerwitz, Griner
Canyon Creek . . . . .	Gerwitz, Griner
Gentry . . . . .	Gerwitz, Griner
Heber . . . . .	Gerwitz, Griner
Forest Dale . . . . .	Carey, Fair
McNary . . . . .	Carey, Fair
Milk Ranch . . . . .	Carey, Fair
Casner Park . . . . .	Gerwitz, Greaves, Griner
Munds Park . . . . .	Gerwitz, Greaves, Griner
Antelope Park . . . . .	Gerwitz, Greaves, Griner
Mormon Mountain . . . . .	Gerwitz, Greaves, Griner
Mormon Lake . . . . .	M. F. Greaves
Mingus Mountain . . . . .	H. Linn
Iron Springs . . . . .	E. Saxby
Camp Wood . . . . .	Mrs. C. C. Merritt
Willow Ranch . . . . .	T. Miller
Grand Canyon . . . . .	Sylvester, James
Bright Angel . . . . .	Folson
Ft. Valley . . . . .	A. P. Loska
Challender . . . . .	Schroeder, Cravens
Bearwallow . . . . .	W. H. Hughes
Rose Canyon . . . . .	W. H. Hughes
Pacheta . . . . .	J. Thorsen
Big Lake Knoll . . . . .	Gerwitz, Griner
Maverick Fork . . . . .	Gerwitz, Griner
Baldy . . . . .	Gerwitz, Griner
Ft. Apache . . . . .	Gerwitz, Griner
Taylor Creek . . . . .	F. M. Inman
Inman . . . . .	F. M. Inman
Coronado Trail . . . . .	R. L. Diggs
Nutriso . . . . .	R. L. Diggs
State Line . . . . .	Liedeman, Shumate
Frisco Divide . . . . .	Liedeman, Shumate
Beaver Head . . . . .	Jess Burke





The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture  
Forest Service  
    Apache Forest  
    Coconino Forest  
    Coronado Forest  
    Gila Forest  
    Kaibab Forest  
    Prescott Forest  
    Sitgreaves Forest  
    Southwestern Forest and Range Expt.  
        Station, Fort Valley, Arizona  
Soil Conservation Service  
    Division of Irrigation

Department of Commerce  
Weather Bureau  
    Arizona Section

Department of Interior  
Bureau of Reclamation  
    Region III  
Geological Survey  
    Arizona District  
Indian Service  
    Fort Apache Reservation  
National Park Service  
    Grand Canyon National Park

Gila Water Commissioner  
    Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users Association  
    Phoenix, Arizona

San Carlos Irrigation and Drainage District  
    Coolidge, Arizona

Southwest Lumber Mills, Inc., McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

Federal - State - Private  
COOPERATIVE SNOW SURVEYS

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Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

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"WATER IS THE WEST'S GREATEST RESOURCE"

